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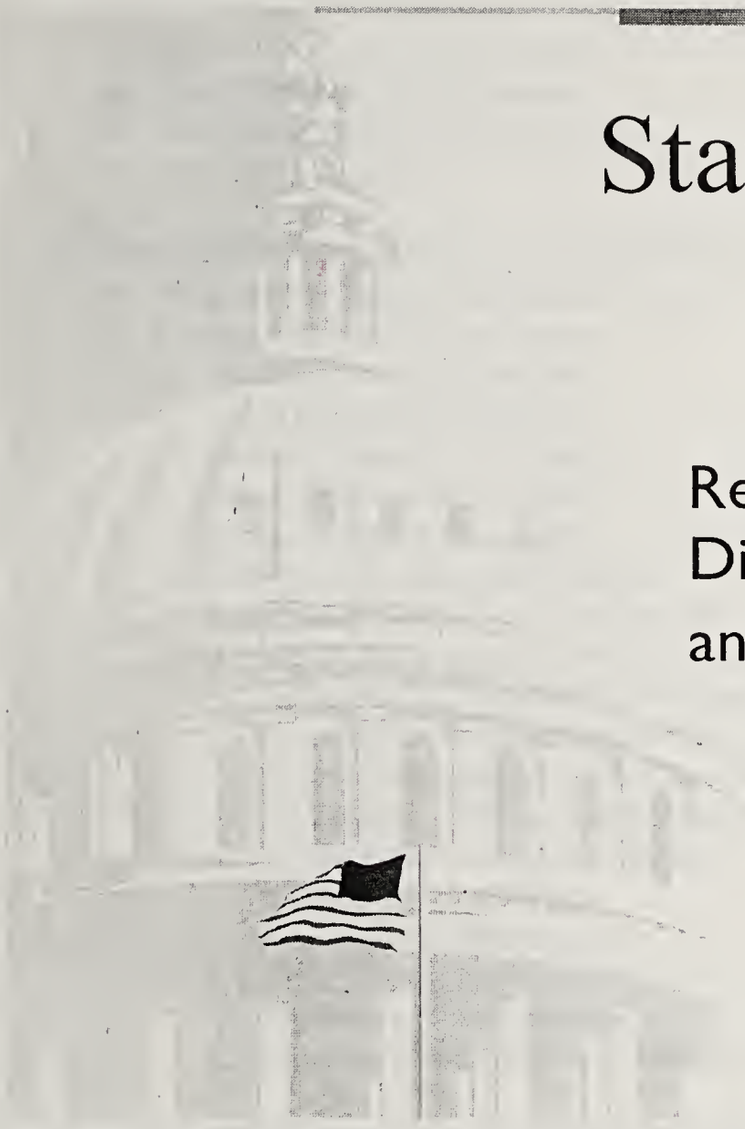

State of Montana

Report of GIS Technology Directions, Implementation, and Use

Draft Version

ITAC GIS Task Force

Approved:

ITAC - March 15, 1996

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I. SECTION ONE: INTRODUCTION

A. ITAC GIS TASK FORCE FORMATION

ITAC approved the formation of the GIS task force in its July 11, 1995 meeting. Approval of the task force reflected the importance ITAC places on the benefits GIS technology offers the State of Montana. Task force formation also signaled ITAC's recognition of its need to take a more active role in establishing statewide GIS directions and standards.

B. TASK FORCE MISSION AND OBJECTIVES

The task force was given the mission of recommending directions to ITAC which facilitate the effective use and implementation of GIS technology statewide. The following objectives were identified for supporting this mission:

- Assess and document Montana's current GIS environment and identify future plans for using GIS.
- Review existing GIS standards and recommend to ITAC the approval of appropriate standards.
- Identify and prioritize GIS issues and concerns needing in-depth study.
- Recommend options ITAC should consider for establishing statewide GIS directions.

C. TASK FORCE ACTIVITIES

The task force met approximately once every two to three weeks from September through December 1995.

Early on, a decision was made to conduct a GIS survey across all levels of government. The intent was to gather information related to GIS programs throughout Montana. The task force used this information to help identify issues and recommendations for submittal to ITAC, some of which are contained within this report.

The task force then identified GIS needs which members felt would support its assigned mission and objectives. The following needs were documented:

- There is a need to establish statewide GIS policies related to funding arrangements, legal issues, inter-entity relationships and standards.

- There is a need to establish a statewide GIS framework. This would include support for issues affecting GIS data sharing, data coordination, data access, data collection and data maintenance.
- There is a need to implement GIS in an effective manner. This includes identifying GIS users, serving GIS users, supporting GIS practitioners and planning strategically for the growth of GIS.
- There is a need to align GIS needs within the context of ITAC's Information Technology Strategic Plan.

The task force also developed a guiding principal which highlights all GIS needs. That is .....

> "Let us foster an environment which promotes cooperation, facilitates data sharing and explicitly identifies all stakeholders responsibilities for supporting the statewide GIS."

To this end, the task force submits the following report to ITAC.

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II. SECTION TWO: CURRENT ENVIRONMENT

A. WHAT IS A GEOGRAPHIC INFORMATION SYSTEM?

An automated Geographic Information System is an integrated database of information about geographic features as well as the computer hardware, software, and people required to analyze the data. In essence, a GIS is a tool for bringing together, from various sources, data about feature locations (geographic coordinate data) and information about those features (attribute data), to provide the ability to query, manipulate, and analyze the data.

In a GIS, the map data are separated into and stored as common thematic data layers. By storing information in layers registered to a common map coordinate framework, any combination of these layers may be overlaid to form a new data set, a map, or used to answer questions or perform spatial analyses. One can also think of a GIS as a "database of databases" where a single GIS layer may represent an entire database. A GIS has all of the functionality of traditional databases plus the ability to manage, manipulate, and display spatial data (maps or graphics).

A GIS is not just an automated cartographic tool, but is a complete data management system that may be used in day-to-day operations. GIS is an integrating information tool that can bring together information from many databases for cross comparisons. A GIS may be thought of as a database of databases. In many instances, the implementation of a GIS is the automation of existing procedures or methods. The critical component of any GIS is the data and information. ***Acquiring accurate and useful data in a GIS can account for 80% of the overall cost and effort.***

B. CURRENT STATUS OF GIS IN MONTANA

We estimate that, including both the public and private sector, there are more than 100 active GIS projects in the state. This activity may partly be measured by participation in the Montana GIS Users Group. The Users Group has held eight annual GIS conferences with an average attendance of 250-300 people. The User Group also maintains a mailing list in excess of 1,500 people who receive the quarterly *Montana GIS News*.

Historically GIS has developed around natural resource projects in Montana. This can primarily be attributes to availability of data, cost of the technology, demonstrated applications for the technology, and lack of large urban centers in Montana. Currently we are seeing a significant growth in use of GIS in Local Governments and non-natural resource organizations as well as continued growth in natural resource applications.

1. STATUS OF STATE GIS PROJECTS

GIS is a prevalent information and analytical technique in state government. Some examples of the agencies and projects at the state level include:

- The Natural Resource Information System at the Montana State Library provides direct GIS production services as well as providing technical and project development assistance and GIS coordination.

- The Department of Environmental Quality Superfund Bureau contracts with NRIS to provide GIS services to support the remediation of the upper Clark Fork Superfund sites in Butte, Anaconda, Milltown, and the Clark Fork river.

- The Department of Justice contracts with NRIS to provide GIS services to support the State's Natural resource Damage Claim against ARCO in the upper Clark Fork.

- The Governor's Drought Advisory Committee uses GIS to support drought monitoring and dissemination of drought information through out the state. Three hundred copies of three different maps are printed and distributed each month between February and August.

- The Office of Policy, Research, and Development within Information Services Division of the Department of Administration developed a GIS to assist in the allocation coordination and management of radio frequency spectrum.

- The Department of Environmental Quality Coal and Uranium Bureau is using GIS to assist in mine permitting and to monitoring groundwater in the Powder River basin.

- The Department of Environmental Quality Forestry Division in Missoula is using GIS for timber stand management.

- The Legislative Council used GIS for its apportionment and re-districting project. This project resulted in the creation of a statewide database of the U.S. Census Bureau's TIGER Line data and census geography.

- The Department of Revenue contracted with the University of Montana's School of Forestry to employ GIS in the evaluation of private forest lands taxation.

- The Department of Natural Resources and Conservation Water Resources Division is developing a GIS to support water rights planning for the upper Clark Fork.

- The Department of Natural Resources and Conservation used GIS to assist in the preparation of an environmental impact statement for re-routing a power line. In addition, the Division is developing a GIS to support future energy siting projects.

- The Reserved Water Rights Compact Commission uses GIS (and has since 1987) to assist in concluding water rights compacts with the federal government and tribes.

- The Department of Fish, Wildlife, and Parks Fisheries Division in Kalispell is conducting several fisheries related GIS projects. The Wildlife Division has used GIS on many projects over the past several years. FWP Lands Division is starting to use GIS to manage their land inventory.

- The Department of Agriculture is developing GIS for its groundwater pesticide monitoring program.

- Montana State University uses GIS for teaching and research and has established the Geographic Information and Analysis Center to conduct a wide range of GIS projects.

- The Department of Plant and Soil Science at Montana State University developed the Montana Agricultural Potentials System (MAPS) to provide GIS support to the agricultural sector to improve planning and decision-making.

- The University of Montana School of Forestry has a variety of geographic information systems to support research and instruction.

- The University of Montana Wildlife Coop Unit is using GIS to assess biodiversity across the state in its Gap Analysis Project.

- Montana Tech and the Montana Bureau of Mines and Geology has several GIS projects underway, particularly related to water resources and geologic information.

- The State Data Center in the Department of Commerce is using GIS to manage and query Census data.

2. LOCAL CITY/COUNTY PROJECTS

The following list is the current status of GIS in Montana's local governments.

COUNTIES WITH GIS:

Anaconda/Deerlodge, Beaverhead, Butte/Silverbow, Cascade, Flathead, Gallatin, Lewis and Clark, Lincoln, Madison, Missoula, Musselshell, Stillwater, Roosevelt, Yellowstone

CITIES WITH GIS:

Bozeman

COUNTIES/CITIES CONTEMPLATING GIS:

Lake, Park, Petroleum, Powell, McCone, Ravalli, Richland

3. STATUS OF FEDERAL GIS PROJECTS

All of the federal natural resource agencies in Montana use GIS in some fashion and many of the non-natural resource agencies use GIS or have access to it. All now have in-state capabilities and many have support from regional offices. Federal agencies using GIS in Montana include the U.S. Geological Survey, the U.S. Bureau of Land Management, the U.S. Environmental Protection Agency, the U.S. Natural Resource Conservation Survey, U.S. Fish and Wildlife Service, Bonneville Power Administration, the U.S. Bureau of Mines, U.S. Forest Service, and the U.S. Bureau of Indian Affairs.

Federal GIS activities coordinated by the Federal Geographic Data Committee (FGDC). The FGDC was established through the Office of Management and Budget (OMB) Circular A-16 and charged with the responsibility to coordinate various surveying, mapping, and spatial data activities of federal agencies to meet the needs of the Nation. Major objectives of Circular A-16 are to avoid duplication and minimize costs in mapping and spatial data activities by establishing standards and providing wider access to geospatial data. The FGDC has also been charged with coordinating geospatial data related activities with other levels of government and other sectors.

The principle activity of the FGDC is the establishment of the National Spatial Data Infrastructure (NSDI). The NSDI is conceived to be an umbrella of policies, standards, and procedures under which organizations and technologies interact to foster more efficient use,

management, and production of geospatial data. The NSDI requires and will facilitate cooperation and interaction among various levels of government, the private sector, and academia. The major components of the NSDI include a basic framework of digital geospatial data to act as a foundation for numerous other data collection activities; known quality thematic data sets of critical national importance; standards to facilitate data collection, documentation, access, and transfer, and the means to search, query, find, access, and use geospatial data. Strategies to build the NSDI include establishing forums for communication, facilitating access to data, building framework and thematic data sets, developing educational and training programs, and fostering partnerships for data sharing. Key actions underway are developing and implementing standards for framework and thematic data; producing framework and thematic data; implementing standards for geospatial data documentation and transfer; establishing procedures to use electronic networks to search for, access, and use geospatial data; and cooperating in the development of state and regional councils and private sector agreements to accomplish these actions. The Clinton Administration has tasked the Federal Geographic Data Committee (FGDC) to provide the federal leadership for evolving the NSDI in cooperation with state and local governments and the private sector. The success of the NSDI will hinge upon the ability to build and maintain partnerships among these entities to carry out the actions of this plan.[1]

4. STATUS OF TRIBAL GIS PROJECTS

Many tribal governments in Montana are established GIS users. At least four tribes in Montana use GIS. The Confederated Salish and Kootenai Tribe, the Blackfeet Tribe, the Crow Tribe, and the Fort Peck Reservation all use GIS in reservation management and planning.

5. STATUS OF PRIVATE SECTOR GIS

The private sector is heavily involved in GIS in Montana--both as users and providers of services. For example, several oil and gas corporations use GIS for information management and to support resource exploration. Montana Power is investigating ways to employ GIS, and many engineering and environmental consulting firms use GIS. Plum Creek Lumber uses GIS to facilitate the management of its' forest resources.

[1] (Note: FGDC information taken from the FGDC home page at http://fgdc.er.usgs.gov/fgdc2.html)

Several Montana based-companies--including GeoResearch, Inc., Morrison-Maierle, Inc., GeoData Services, Inc. GeoScience and Engineering, Inc, Oikos Works, Positive Systems, SMD engineering, and GGI, Inc.--offer GIS production services (e.g., consulting, data collection, digitizing, map reproduction)and GIS software sales.

6. STATUS OF GIS HARDWARE/SOFTWARE

There is no mandated standard GIS software for state agencies in Montana. However, ARC/INFO GIS software (both for PC's and UNIX workstations) has emerged as a *de facto* standard. The state currently has more than 50 licensed copies spread throughout 11 state and county agencies. The University of Montana, in addition to ARC/INFO, and the Forestry Division the Department of Environmental Quality, also use PAMAP GIS software. Montana State University and the State Historical Society use IDRISI GIS software in addition to ARC/INFO. NRIS, the University of Montana (UM), Montana State University (MSU), and the Reserved Water Rights Compact Commission also have ERDAS image processing and GIS software. Many agencies use a computer aided design (CAD) software for mapping and graphics purposes. The Department of Transportation uses Arc/Info and Intergraph software--a CAD package with some GIS capabilities. Exchange of data among these software packages in most cases does not pose a problem.

There is no mandated computer platform for GIS other than that set by ISD for mid-tier and micro-computers. Of the agencies using ARC/INFO, most use it on UNIX-based graphics workstations. Both MSU and UM run ARC/INFO on PCS and UNIX workstations. The large data storage and fast CPU requirements of GIS applications call for high-speed computers with large memories and large disk capacities found in the UNIX workstations and the upper-end PCS (486 or Pentium machines). Intergraph also runs on workstations manufactured by Intergraph Corporation. CAD programs such as Autocad and Intergraph MicroStation are run on PCs.

The standard network for the UNIX workstations uses TCP/IP protocols on a Ethernet local area network. PCs may be linked into these local area networks with a variety of software programs.

The principal peripheral devices associated with GIS applications are digitizing tablets or tables and either pen or electrostatic plotters. There are a variety of digitizers and plotters currently in use in the state. The major considerations associated with the selection of these devices are the purchase price, output capabilities, maintenance and supply costs, and compatibility with the GIS software being used.

GIS Training opportunities in Montana are growing. Both UM and MSU offer workshops and classes in GIS. NRIS offers a full-day introductory GIS workshop and the Montana GIS User Group offers training at its annual conference. MSU also offers vendor endorsed PC ARC/INFO and ArcView training courses.

7. STATUS OF STATEWIDE GIS COORDINATION

Montana has made great strides in coordinating GIS development and cooperation among local, state, and federal agencies. There are four major groups coordinating GIS Activities in Montana, the GIS Interagency Technical Working Group (TWG), the Local Government GIS Coalition, the Montana GIS Users Group, and the Montana Natural Resource Information System.

a.) Montana Interagency GIS Technical Working Group

The TWG and its steering committe were created by the Montana Interagency GIS Memorandum of Understanding.

1.) Montana Interagency GIS Memorandum of Understanding

The Montana Interagency GIS Memorandum of Understanding (MOU) has been signed by 20 state and federal agencies involved in GIS development and operation. The MOU documents an agreement to establish a vehicle for particpating agencies and organizations to coordinate the development of geographic information systems (FIS) in Montana. The MOU encourages agencies to minimize the duplication of digital data, transfer technology and exchange data, develop data standards, and share resources in completing joint, interagency projects.

Specific goals of the MOU are to:

- establish a cooperative effort to share digital data among the various resource management agencies and organizations within the state;
- make available all relevant, public domain, digitized databases managed by participating agencies;
- develop priorities for joint GIS development efforts and projects;

- investigate opportunities to jointly fund projects designed to create statewide, base map themes for Montana;

- develop and share new and emerging technologies to facilitate GIS products; and,

- promote the use of GIS by resource managers, scientists, educators, and where appropriate, the general public.

- The following agencies are signatories to the Interagency GIS MOU:

  - Montana Department of Natural Resources and Conservation, Helena;
  - Montana State Library, Natural Resource Information System, Helena;
  - Montana Department of Transportation, Helena;
  - Montana Bureau of Mines and Geology, Butte;
  - Montana Department of Environmental Quality, Helena;
  - Montana Department of Fish, Wildlife, and Parks, Helena;
  - Montana State University, Bozeman;
  - Montana Legislative Council, Helena;
  - University of Montana, Missoula;
  - Reserved Water Rights Compact Commission, Helena;
  - Bonneville Power Administration, Portland;
  - National Park Service, Grant Kohrs Ranch, Deerlodge;
  - U.S.Fish and Wildlife Service-Charles M. Russell National Wildlife Refuge, Lewistown;
  - U.S. Bureau of Mines, Field Operations Center, Spokane, Washington;
  - U.S. Natural Resource Conservation Service, Bozeman;
  - U.S. Bureau of Land Management, Billings;
  - U.S. Geological Survey, Helena;
  - U.S. Forest Service, Region I Office, Missoula;
  - U.S. Environmental Protection Agency--Montana Office, Helena;
  - U.S. Bureau of Indian Affairs, Billings.

2.) Montana GIS Interagency Management Steering Committee

The MOU established a Montana GIS Interagency Management Steering Committee consisting of one management representative from each agency or organization signing the MOU. The purpose of the Steering Committee is to develop an action plan to meet the objectives of the MOU, and to provide necessary direction to a Technical Working Group established by the MOU. The Steering Committee identifies potential interagency projects, determines long-term direction and operational parameters, and directs the implementation of action items. The Steering Committee meets at least annually.

3.) Montana Interagency GIS Technical Working Group

The Montana GIS Interagency Technical Working Group (TWG) is a forum for the exchange of information regarding the acquisition of new GIS data, the existence of current GIS data, and information relating to agency GIS projects. The TWG meets at different sites around Montana on a quarterly basis. Specific tasks of the TWG are:

- Data Acquisition Coordination

  As part of its data coordination effort, the TWG maintains a permanent meeting agenda item dedicated to data acquisition. Time is set aside at each TWG meeting for the participating agencies to present data acquisition plans.

- Data Documentation Standards

  GIS data documentation provides information about the history and format of digital map data. This documentation process applies both to base data as well as derived data. It is vital that digital map data have external documentation to help in the search and identification of applicable data as well as to help prevent inappropriate applications of the data. In 1989, the TWG developed a set of guidelines for documenting GIS data. These guidelines represent an abstract level of information which should be recorded for each GIS data theme. In 1994 the TWG formally adopted the FGDC Metadata Standards.

- Data Standards Plan

  The TWG developed the *Montana Geographic Information System Standards Plan* to provide a standard for cooperation among the various federal, state, and local governmental agencies involved with GIS. The overall goals of the plan are to foster cooperation among the various entities using GIS and to provide guidance to those agencies contemplating starting a GIS. Specifically, the plan provides direction to implement the goals of the Montana Interagency GIS Memorandum of Understanding.

- Statewide Base Layers

  A key to successful statewide GIS database formation is the development of base layers. The TWG identifies agencies currently creating and maintaining base GIS layers. These layers will reside with the agency responsible for the data collection and maintenance. The status for statewide basemap layers is shown in the following table:

Montana Statewide Basemap Layer Status

LAYER	RESPONSIBLE AGENCY	STATUS
TRANSPORTATION	USGS	1:100,000 DLG files for entire state complete. Avilable from NRIS.
UTILITIES	DNRC	Transmission Lines Complete
TOPOGRAPHY	USGS	7 or 15 meter DEM complete for most of state - much is available from NRIS. 3 arc second data complete for entire state - available from NRIS.
HYDROGRAPHY	USGS	1:100,000 DLG files for entire state complete. Available from NRIS.
U.S PUBLIC LAND SURVEY	USGS/BLM UM/NRIS	Currently in progress by BLM. Schedule completion for entire state is December 1995. 1:24,000 complete for most of state - needs organizing and attributing - available from NRIS
GEOGRAPHIC NAMES	USGS	GNIS files for entire state complete. Available from NRIS.
BOUNDARIES	USGS	
GENERALIZED OWNERSHIP	BLM	Cooperative project currently under way. Scheduled completion end of 1995
CENSUS GEOGRAPHY	Census Bureau	Entire state complete. Available from NRIS.
SOILS	Soil Conservation Service	1:250,000 STATSCO complete for entire state, not certified by SCS yet. Available from NRIS. 12% of state complete at 1:24,000.
LAND USE	USGS	1:250,000 complete for state. Available from NRIS
VEGETATION	GAP Project/UM	Classification of Landsat Thematic Mapper images currently in progress. Scheduled completion date December of 1995.
GEOLOGY	Montana Bureau of Mines and Geology /USGS	Currently in Progress.

4.) Local Government Coalition

The Montana Local Government GIS Coalition (MLGGC) was formed by a group of interested local government GIS practioners in July 1995. Membership is open to all city and county governments. Members are charged an annual fee based on taxable value (counties) and population (cities). This organization has six goals: (1) to promote a bottom up approach for data acquisition which begins at the local level, (2) to provide for an exchange of ideas among local government GIS users, (3) to provide information through workshops, seminars, and meetings, (4) to provide a forum to identify common problems and unified solutions to benefit city, county and state entities, (5) to establish a vehicle to provide non-computer users with information and technical

assistance, (6) to provide representation and advisement on state and regional technology issues and encourage participation by other interested parties. The Montana State University Geographic Information and Analysis Center provides technical as well as logistical support.

Initial endeavors undertaken by the MLGGC have been successfully accomplished over the past several months. These activities included: (1) an ArcView2 computer demonstration displaying GIS status and various data layers in Montana's local governments and slide presentations on GIS in Local Government, the MLGGC mission and objectives and Free Data Acquisition at the September MACO Conference in Billings, (2) Steve Helenthal, Chairman and Stu Kirkpatrick, Vice-Chairman were appointed to the ITAC GIS Task Force formed to review and promote effective use and implementation of GIS at all levels of government, (3) the MLGGC home page on the WEB is in the implementation phase and additional logistical and technical support for local governments has been enhanced both due to funding from the FDGC grant.

New initiatives developing are: (1) the MLGGC, Department of Revenue, Montana State Local Government Center and Geographic Information and Analysis Center are in the process of drafting a legislative proposal to develop statewide parcel mapping procedures, (2) a spring workshop conducted regionally throughout the state to provide hands-on assistance and training in documenting data in accordance with the FDGC standards and accessing the Internet is being developed through FDGC grant endowments, (3) a GIS technical demonstration is being developed with ESRI products demonstating spatial analysis and linear modeling in local government at the February Maco Planning Conference and (4) research is being conducted on funding sources for Montana's Local Governments.

5.) Montana GIS User Group

The Montana GIS User Group is a statewide consortium of governmental agencies and businesses involved with GIS technology. At the 1990 Montana GIS Conference in Missoula, the User Group adopted a founding charter and has since been incorporated. The Group's purpose is to provide a forum for exchanging information and ideas on GIS technology. Membership is open to anyone with an interest in GIS and willingness to share their knowledge. The User

Group sponsors an annual GIS conference, a quarterly newsletter, and supports other activities (e.g., the *Montana Data Directory*) designed to transfer information on GIS in Montana.

6.) The Montana Natural Resource Information System

In 1985, the Montana Legislature created the Natural Resource Information System "... to provide a ready, accessible means of finding information on Montana's natural resources." NRIS, located at the Montana State Library in Helena, operates as a data clearinghouse and referral service to link users with the best sources of information In addition, NRIS coordinates among agencies and organizations that collect, manage, or use the same types of natural resource information in order to prevent duplication of effort and to promote information sharing. NRIS fulfills its mission through three programs: the Montana Water Information System, the Montana Natural Heritage Program, and the Geographic Information System.

III. SECTION THREE : GIS POLICIES AND STANDARDS

A. ISSUE 1: FUNDING

(TO BE DEVELOPED)

B. ISSUE 2: LEGAL

(TO BE DEVELOPED)

C. ISSUE 3: STANDARDS

(TO BE DEVELOPED)

D. ISSUE 4: INTER-ENTITY RELATIONSHIPS

Should inter-entity cooperation be based upon existing relationships or should ITAC recommend formation of a state-wide GIS Coordinating Council?

1. COMMENTS

The driving force fostering present inter-entity GIS cooperation in Montana has traditionally been the dedication of a few individuals banding together to share common problems, GIS expertise, and occasionally data. Whether through a need to validate their own existence in the workplace, or through a realization that cooperation was the road to a broader based acceptance of the technology, those individuals' determination to aggregate GIS issues has lead to the formation of several GIS groups. Those leaders, for the most part, have been able to bring the organizations they represent into the arena as well, leading to the impression at least, that Federal Agencies, Montana State Agencies, Local Governments, Tribal Units and private companies have common GIS goals and objectives. A more analytical observation might be that Montana's GIS participants are struggling to define their individual and collective roles, the same as similar entities in other states are doing, however the struggles up to now have taken place in a rather constructive atmosphere of cooperation.

Eight years ago Montana GIS users held their first GIS Users Conference in Helena with approximately 50 participants. There have been annual conferences ever since, and these conferences directly led to the formation in 1992, and incorporation in 1993 of the Montana GIS Users Group. This group, with a mailing list of approximately 1000 and a membership of around 500, publishes quarterly newsletters, sponsors the annual conference and promotes GIS training and education.

Two other influential Montana GIS groups are the Montana Technical Working Group (TWG) and the recently formed Montana Local Government GIS Coalition (MLGGC). The TWG consists of representatives of 20 federal, state and tribal agencies and entities, co-signers of an MEOW that promotes data sharing and cooperation (a copy of that MEOW is included as Appendix ?). The TWG meets quarterly to prioritize the collection of state-wide data sets and to monitor data collection efforts. The MLGGC was formed in 1995 and presently has a paid membership of ten Montana Counties and Cities, and a mailing list of approximately one hundred. It was developed to promote the idea of "bottom up" data collection and provide a unified voice when addressing issues affecting local government GIS implementation. The TWG and

MLGGC send representatives to each others meetings but hold no formal membership in each others governing bodies.

Other associations with potential interest in state-wide GIS coordination are the various Tribal Councils, the Montana Association of Counties (MACO), the Montana Association of Planners (MAPS)and the Montana Interagency Coordinating Group (MICG) through their work in formation of a framework to sustain ecosystems, watersheds and communities in Montana.

On a national level, the Federal Geographic Data Commission would attempt to enlist the efforts of all the above groups to cooperate in adopting federal meta-data standards and participate in the National Spatial Data Clearinghouse and the National Spatial Data Framework (which are discussed elsewhere in this report).

It should be noted that many groups interested in GIS coordination is not a situation unique to Montana nor should it be construed as a disorganized effort. Indeed, the formal legal document establishing the TWG is one of a kind in the U.S. and in many ways Montana is recognized as a leader in GIS cooperation. The entry of local governments as players may be considered a challenge to more formally define GIS roles, especially in the area of data collection or may be considered an impediment to continued cooperation. The changing perception of the federal governments role in providing services that transcend state and regional boundaries may radically change their relationship to state agencies and local governments in Montana. With this in mind, this task force suggests the following options.

2. OPTIONS

a.) **Option A** - Use Existing Procedures

1.) Advantages

- Present system works fairly well.
-
-

2.) Disadvantages

- State or local governments have no mechanism to influence state funding decisions.
-
-
-
-

b.) **Option B** - ITAC formally recognizes existing groups(which one/ones) as GIS spokesman.

1.) Advantages

-
-
-

2.) Disadvantages

-
-
-

c.) **OPTION C** - ITAC recommends formation of a state-wide GIS Coordinating Council.

1.) Advantages

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-
-

2.) Disadvantages

-
-
-

3. RECOMMENDATIONS

ITAC .....

(TO BE DEVELOPED)

IV. SECTION FOUR: DATA FRAMEWORK

A. ISSUE 1: SHARING/COORDINATION

(TO BE DEVELOPED)

B. ISSUE 2: ACCESS

(TO BE DEVELOPED)

C. ISSUE 3: COLLECTION/ACQUISITION

(TO BE DEVELOPED)

E. ISSUE 4: MAINTENANCE

(TO BE DEVELOPED)

V. SECTION FIVE: RECOMMENDED ITAC GIS DIRECTION

A. ISSUE 1: SERVE USERS

How can the State of Montana, in coordination with Federal and local governments, and other GIS providers, best serve the needs of the users of GIS technology?

1. COMMENTS

The implementation of GIS technology in Montana requires hardware, software and people. The amount of hardware, the type of software and the personnel needed will differ by agency and projects within an agency.

All the areas identified can benefit from standardization. Current GIS hardware platforms are as diverse as the computer industry and the issues of networking, proprietary design and compliance to industry standards are the same.

Software packages are numerous. Within the State agencies, some consistency exists on the GIS packages. The Local Government implementations are more diverse but are not as wide spread. The Federal Government seems to be developing a standard.

Training needs are dictated by the hardware and software used as well as the costs of training and/or hiring GIS practitioners.

NOTE : The use of the term agency in the following options are meant to mean all governments. This obviously can not be implemented by ITAC or the State of Montana alone.

2. OPTIONS - HARDWARE

a.) Option A - Hardware needed to accomplish the goals of an agency be procured within their existing framework.

1.) Advantages

- No new procedures are needed.
- Each agency get what it needs.
- Timely decision and procurement.
- Local support.

2.) Disadvantages

- In the case of non-State agencies, incompatible platforms may result.
- Bulk discounts may not be realized.
- Networking options may be limited.

b.) Option B - Hardware be purchased within the guidelines of the State of Montana Mid-Tier Standards policy.

1.) Advantages

- Enables networking and data transmission efficiencies.
- Allows for shared support options between agencies.
- Allows for volume discount advantages, if possible.

2.) Disadvantages

- May limit local support for some agencies.
- May result in some time delays in purchasing.

c.) Recommendations

1.) The State adhere to the Mid-Tier standards already defined. 2.) Methods be developed to entice non-state agencies to adopt those standards.

3. OPTIONS: SOFTWARE - VENDOR

a.) Option A - GIS software packages be purchased with no review, incentives or standardization incentives or requirements.

1.) Advantages

- Best package for the requesting agency needs are met.
- Local expertise possible
- Lower cost of purchase possible
- Lower cost for training possible
- Quicker implementation possible

2.) Disadvantages

- Loss of shared hardware/software support
- Loss of shared application development
- Loss of hardware sharing opportunities (plotters, digitizers)

- Increased costs for data exchange
- Loss of shared training opportunities
- Potential loss of capability for future GIS growth

b.) Option B - GIS software be standardized as to functionality

1.) Advantages

- Better ensures functionality will exist as implementation grows, avoiding purchasing new software and converting the old system
- Enhanced data sharing formats would be required

2.) Disadvantages

- Loss of shared hardware/software support
- Loss of shared application development
- Loss of hardware sharing opportunities (plotters, digitizers)
- Loss of shared training opportunities could be more costly

c.) Option C - GIS software be standardized as to functionality and specific packages.

1.) Advantages

- Best data sharing/transfer potential
- Possible shared application development opportunities
- Possible hardware resource sharing
- Best shared expertise opportunities
- Best shared training sharing opportunities

2.) Disadvantages

- Possible increases in software purchase costs
- Potential long term dependancy costs
- Possible inflexible product development
- Possible non-competitive purchase/maintenance costs

d.) **Recommendations**

ITAC adopt standards.....

4. OPTIONS: SOFTWARE - IN-HOUSE (LEGACY)

a.) Option A - Software specific to the functions of an agency be developed without State policy.

1.) Advantages

- More timely
- More specific to the agency needs

2.) Disadvantages

- Duplication of applications.
- Lack of consistency
- Inter-agency needs may not be addressed
- Increased costs
- Inability to interface with other system applications

b.) Option B - A State policy providing the means to coordinate GIS software development among affected agencies.

1.) Advantages

- Potential cost sharing for application development
- Minimize inter-application conflicts
- Minimize inter-agency conflicts
- Maximize training opportunities
- Potential cost savings
- Minimize legacy system development

2.) Disadvantages

- Agency overhead to attend coordination efforts
- Potential loss of control of design

c.) Recommendations

ITAC .....

(TO BE DEVELOPED)

5. OPTIONS: TRAINING

a.) **Option A** - Training be accomplished by each agency without a State policy

1.) Advantages

- Status Quo
- Training is timely
- Costs may be minimized

2.) Disadvantages

- No common base level of training provided.
- No application development enhancements identified.
- No cost efficiencies in one-site or traveling training.
- Coordination with work force providers.
- Costs due to lack of training may result.

b.) **Option B** - Training be coordinated with affected agencies.

1.) Advantages

- Shared base level of knowledge
- Ability to transfer personnel easier
- Identify software enhancements
- Potential cost efficiencies

2.) Disadvantages

- Coordination overhead
- May be more costly if over-training resulted

c.) **Recommendations**

ITAC .....

(TO BE DEVELOPED)

B. ISSUE 2: DOCUMENTATION OF DATA CREATION AND ANALYSIS PROCEDURES

Should the state adopt currently existing Federal Spatial Data standards and/or recommendations of the state GIS Technical Working Group for the

standards to be applied in creating and documenting spatial data produced using state funds?

1. COMMENTS

Numerous projects using state funding to create spatial data are underway. To ensure that these data will meet the accuracy standards necessary for current and future applications, adherence to standards accepted nationally and developed through the participation of GIS professionals is desirable. The metadata elements recommended by the FGDC provide a suitable format for documentation and are required to accompany spatial data produced using federal funding. By adopting similar documentation requirements for state spatial data, the value and utility of the data is dramatically increased. The requirement of documentation serves as a prohibition to the creation and use of inferior, sub-standard data in applications that analyze state resources.

Fifteen percent of all state agencies have indicated in their 1996-97 plans the intention to use GIS in mapping state resources, or in the analysis of resource management (pg 141 ITP). As the use of spatial data analysis techniques increases, so does the need to keep the results of these analyses in full compliance with existing legal standards for assessments conducted. To ensure that legally sufficient analysis criteria are applied in assessments conducted with the use of GIS, metadata documentation requirements should also be developed and implemented for GIS analysis applications.

2. OPTIONS

a.) **Option A** - ITAC could endorse the use of currently existing data creation and documentation standards.

1.) Advantages

- New standards would not have to be developed.
- Data produced by the state would be assured of meeting standards in common use nationally.
- The potential for cost-sharing with other agencies is increased.

2.) Disadvantages

- Compliance is voluntary, and would require a tracking mechanism.
- Existing standards may not be well understood by users. May require training to ensure use.

b.) Option B - State agencies could be allowed to continue creating data and performing GIS analysis with no documentation required.

1.) Advantages

- No immediate expenditure of state funds would be identified.

2.) Disadvamtages

- Increased risk of duplication of effort and cost.
- Utility of data may be limited.
- Legal sufficiency of data and analysis may be questionable.

c.) Option C - The role of the Montana State Library could be expanded to include serving as a clearinghouse and repository for common applications developed by state agencies.

1.) Advantages

- An existing facility is used to meet a growing need.

2.) Disadvantages

- Additional funding and possibly additional personnel may be required.

d.) Option D - ITAC could officially endorse the role of the state GIS Technical Working Group (TWG) and expand its functions to include a subcommittee responsible for approving applications submitted to the state applications library.

1.) Advantages

- No new organization is formed and no state funding required.
- An existing forum of GIS professionals would be included.

2.) Disadvantages

- The voluntary participation in the TWG may not ensure adequate representation of all state users, or allow participants to dedicate sufficient time.

3. RECOMMENDATIONS

ITAC .....

(TO BE DEVELOPED)

C. ISSUE 3: SUPPORT TO GIS PRACTITIONERS

How might the state provide coordinated support services to GIS practitioners?

1. COMMENTS

Informal assistance for agencies developing GIS is provided in the state of Montana by several methods. A state GIS users conference has been held annually since 19??.; a state GIS Technical Working Group meets quarterly (under the direction of a state GIS steering committee); and the expertise of individuals practitioners is often highlighted at monthly GIS seminars sponsored by the NRIS program of the State Library. A recently formed coalition of counties using GIS also serves as a mechanism for informal support to local users.

Individual Task Force reports within the Information Technology Strategic Plan (July, 1994) have identified key issues that have significant implications for formal, coordinated support to GIS practitioners. On the issue of coordination, the Funding Task Force report (pg. 77) recommends that the state... "pursue a coordinated statewide (centralized) infrastructure for IT development and consistency using pooled resources with ITAC continuing to prioritize, submit, and support statewide IT projects." Prioritization of GIS projects and support for development could directly benefit GIS practitioners. The Training Task Force report also adopted recommendations that apply to improving formal support for GIS practitioners. Among these, the recommendations for prioritization of support and that of pooling resources (pg 105, ITSP) have particular importance. In the arena of GIS analysis, the recommendation to promote common applications shared by various practitioners, could result in many efficiencies.

2. OPTIONS

a.) Option A - Take no action and allow informal support to be the primary mechanism for support to practitioners.

1.) Advantages

- No additional investment of state resources would be required.

2.) Disadvantages

- Projects will continue to duplicate efforts and development costs.
- Necessary skills will not be appropriately distributed.
- Investment in information technology will be under-utilized.

b.) Option B - Incorporate into the biannual Information Technology Plan a separate category addressing GIS activities and plans listed by agency and prioritized for considerations of overlapping data creation efforts and analysis applications.

1.) Advantages

- Would comply with the recommendations incorporated into the IT strategic plan.
- Institutes a mechanism for including review information about agency projects with a long-term prioritization schedule.
- Increases the likelihood of cooperative funding.
- Reduces the possibility of duplication of effort and non-standardization of common applications.

2.) Disadvantages

- Would require additional time by ITAC and possibly a standing GIS subcommittee to sufficiently review and prioritize GIS projects and proposals.

c.) Option C - Incorporate into the IT Plan a matrix that displays GIS hardware/software and personnel (skills) by state agency.

1.) Advantages

- Would provide information necessary to determine possibilities for pooling resources. Would provide a tool for identifying training needs.

2.) Disadvantages

- Would require additional time by ITAC to develop.

d.) Option D -Establish a statewide Technical Support Hotline to take advantage of communications technology and serve users.

1.)Advantages

- Would provide a means of coordinated assistance for users with hardware/software problems.
- Could reduce the need for on-site assistance.

2.) Disadvantages

- Would require state resources to establish and maintain.

3. RECOMMENDATIONS

ITAC .....

(TO BE COMPLETED)

VI. SECTION SIX: CONCLUSION

(TO BE DEVELOPED)

Report of GIS Technology
Directions, Implementation, and Use

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REPORT SECTION	CHARTER YES/NO?	SECTION STATUS	WRITER	DRAFT DUE DATE
I. SECTION ONE: INTRODUCTION				
A. ITAC GIS Task Force Formation	YES	DRAFT	Mike R.	
B. Task Force Mission and Objectives	YES	DRAFT	Mike R.	
C. Task Force Activities	YES	DRAFT	Mike R.	
II. SECTION TWO: CURRENT ENVIRONMENT				
A. What is a Geographic Information System?	YES	DRAFT	Fred G.	
B. Current Status of GIS in Montana	YES	DRAFT	Fred G.	
1. Status of State GIS Projects	YES	DRAFT	Fred G.	
2. Local City/County Projects	YES	DRAFT	Fred G.	
3. Status of Federal GIS Projects	YES	DRAFT	Fred G.	
4. Status of Tribal GIS Projects	YES	DRAFT	Fred G.	

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5. Status of Private Sector GIS	YES	DRAFT	Fred G.	
6. Status of GIS Hardware/Software	YES	DRAFT	Fred G.	
7. Status of Statewide GIS Coordination	YES	DRAFT	Fred G.	
a.) Montana Interagency GIS Technical Working Group	YES	DRAFT	Fred G.	
1.) Montana Interagency GIS Memo of Understanding (MOU)	YES	DRAFT	Fred G.	
2.) Montana GIS Interagency Management Steering Committee	YES	DRAFT	Fred G.	
3.) Montana Interagency GIS Technical Working Group	YES	DRAFT	Fred G.	
4.) Data Acquisition Coordination	YES	DRAFT	Fred G.	
5.) Data Documentation Standards	YES	DRAFT	Fred G.	
6.) Data Standards Plan	YES	DRAFT	Fred G.	
7.) Statewide Base Layers	YES	DRAFT	Fred G.	
b.) Local Government Coalition	YES	DRAFT	Fred G.	
c.) Montana GIS User Group	YES	DRAFT	Fred G.	
d.) Montana Natural Resource Information System (NRIS)	YES	DRAFT	Fred G.	
III. CHAPTER THREE: GIS POLICIES AND STANDARDS				
A. Issue 1: Funding	YES	NONE	Allan C.	
B. Issue 2: Legal	YES	NONE	Allan C.	

C. Issue 3: Standards	YES	NONE		
D. Issue 4: Inner-Entity Relationships	YES	DRAFT	Stu K.	
1. Comments	YES	DRAFT	Stu K.	
2. Options	YES	DRAFT	Stu K.	
a.) Option A - Use existing procedures	YES	DRAFT	Stu K.	
b.) Option B - ITAC recognition of existing GIS coordination groups	YES	10%	Stu K.	
c.) Option C - ITAC establishes a state-wide GIS Coord. Council	YES	10%	Stu K.	
3. Recommendations	YES	10%	Stu K.	
IV. SECTION FOUR: DATA FRAMEWORK				
A. Issue 1: Sharing/Coordination	YES	NONE		
B. Issue 2: Access	YES	NONE		
C. Issue 3: Collection/Acqusition	YES	NONE		
D. Issue 4: Maintenance	YES	NONE		
V. SECTION FIVE: RECOMMENDED ITAC GIS DIRECTIONS				
A. Issue 1: Serve Users	YES	DRAFT	Steve H.	
1. Comments	YES	DRAFT	Steve H.	

2. Options-Hardware	YES	DRAFT	Steve H.	
a.) Option A - Hardware procured by agency using agency procs	YES	DRAFT	Steve H.	
b.) Option B - Hardware procured via Mid-Tier Stds. & guidelines	YES	DRAFT	Steve H.	
c.) Recommendations	YES	DRAFT	Steve H.	
3. Options: Software-Vendor	YES	DRAFT	Steve H.	
a.) Option A - Acquire GIS packages with no review/incentives/stds	YES	DRAFT	Steve H.	
b.) Option B - GIS software standardized based on functionality	YES	DRAFT	Steve H.	
c.) Option C - GIS soft. standardized on specific package/functions	YES	DRAFT	Steve H.	
d.) Recommendations	YES	NONE	Steve H.	
4. Options: Software-In/House (Legacy)	YES	DRAFT	Steve H.	
a.) Option A - Software developed by agency without a state policy	YES	DRAFT	Steve H.	
b.) Option B - State policy to coordinate GIS soft development	YES	DRAFT	Steve H.	
c.) Recommendations	YES	NONE	Steve H.	
5. Options: Training	YES	DRAFT	Steve H.	
a.) Option A - Training to be done by agencies with no state policy	YES	DRAFT	Steve H.	
b.) Option B - Training to be coordinated with affected agencies	YES	DRAFT	Steve H.	
c.) Recommendations	YES	NONE	Steve H.	

B. Issue 2: Documentation of Data Creation and Analysis Procedures	YES	DRAFT	Cathy M.	
1. Comments	YES	DRAFT	Cathy M.	
2. Options	YES	DRAFT	Cathy M.	
a.) Option A - Use existing data creation and documentation stds	YES	DRAFT	Cathy M.	
b.) Option B - Use current GIS analysis procedures (no doc. rqmts)	YES	DRAFT	Cathy M.	
c.) Option C - Use State Library as a clearinghouse and repository	YES	DRAFT	Cathy M.	
d.) Option D - Use the GIS TWG to approve new applications	YES	DRAFT	Cathy M.	
3. Recommendations	YES	NONE	Cathy M.	
C. Issue 3: Support to GIS Practitioners	YES	DRAFT	Steve H.	
1. Comments	YES	DRAFT	Steve H.	
2. Options	YES	DRAFT	Steve H.	
a.) Option A - Take no action- informal support will primary support	YES	DRAFT	Steve H.	
b.) Option B - Incorporate in biennial Information Technology Plan	YES	DRAFT	Steve H.	
c.) Option C - Incorporate a GIS skills matrix into the IT Plan	YES	DRAFT	Steve H.	
d.) Option D - Establish a statewide "technical s upport hotline"	YES	DRAFT	Steve H.	
3. Recommendations	YES	NONE	Steve H.	
VI. SECTION SIX: CONCLUSION	YES	NONE		

TOPIC FOR ITAC DISCUSSION: Establishment of an ITAC Geographic Information System (GIS) Task Force

TO BE PRESENTED BY: Mick Robinson

DATE TO BE PRESENTED: 7/11/95

Background (from last ITAC Meeting, 5/16/95)

1. Mick Robinson presented the following proposals:

   (a.) ITAC adopt policies, standards, procedures, and funding priorities for GIS technology by the 1997 legislative session.

   (b.) ITAC establish a manageable sized technical advisory group, facilitated by ISD, to work toward the development of GIS policies, standards, procedures, and priorities by 1996. The advisory group should include representatives of local government, federal government, state agencies, university units, and K-12 schools.

   (c.) Assign, by 5/23/95, a subgroup of approximately 5 ITAC members to define the mission and goals and to appoint and monitor the GIS technical advisory group.

2. Alan Cox, Director of the National Resource Information System, State Library, distributed information describing the Memorandum of Understanding being utilized by a group of state and federal agencies (mostly natural resource agencies) for coordinating the development of GIS in Montana. One management representative from each participating agency or organization forms the group's Montana GIS Interagency Management Steering Committee, which meets once a year and works toward meeting the objectives defined in the MOU. The Steering Committee's technical representatives are known as the Technical Working Group (TWG), which meets quarterly.

   The TWG carries out such functions as: coordinating inventories of digital data in Montana, creating a data documentation format to provide standard information about the data contents of a given GIS project, developing data standards, and investigating methods and priorities towards the creation of a statewide transferable digital database.

3. The consensus of ITAC was that GIS technology and development is extremely important to the State of Montana and that ITAC needs to take a more active role in setting statewide GIS direction and standards. Since the Montana GIS Interagency Management Steering Committee and TWG have made excellent progress in developing and encouraging interagency coordination and support for GIS in Montana, it was suggested that Mick Robinson and Alan Cox work together with ISD in formulating and presenting a proposal at the 7/11/95 ITAC meeting which would bring about the development of GIS direction and standards.

New Proposal (From Mick Robinson, Alan Cox, & ISD)

1. An ITAC Task Force be established with 9 members, as follows:

   4 ITAC Members (Dept. of Revenue plus 3 additional ITAC members)
   1 Member from Montana Natural Resource Information System
   1 Member from Montana GIS Interagency Technical Work Group (TWG)
   1 Member from Federal Geographic Data Committee (FGDC)
   2 Members from Montana Local Government GIS Coalition (MLGGC) members *

   (ISD to provide administrative and technical support to the Task Force)
   *MLGGC: Newly formed local government coalition which will represent local governments in statewide GIS issues and which will develop GIS strategies.

2. ITAC GIS Task Force Objectives:
   The Task Force is to facilitate the effective use and implementation of GIS technology through the following objectives.

   a. Assess and document Montana's current GIS environment (systems, standards, requirements, policies, etc.) and agencies/entities future plans for utilizing GIS. This process will be enhanced by involving stakeholders (agencies, libraries, universities, schools, federal government, local government, etc.) who have already invested a tremendous amount of time into GIS research, database implementation, and reporting systems.

   b. Review existing GIS standards adopted by the Montana GIS Interagency Management Steering Committee and TWG and recommend to ITAC the approval of those GIS standards which are: in line with federal guidelines for GIS, which are widely accepted throughout the GIS industry, and which support and/or enhance the enterprise's current IT standards as related to data sharing, database linkage, data integrity, and system interconnection and interoperability.

   c. Identify and prioritize GIS issues and concerns which need in-depth study and resolution (possibly by an ITAC appointed GIS Technical Group).

   d. Recommend the future direction ITAC should take in:

      - setting statewide GIS direction and standards
      - coordinating the development of agency GIS
      - working with existing state, federal, and local GIS committees & coalitions
      - preparing GIS funding proposals for the '97 Legislature

3. ITAC GIS Task Force Duration
   a. 7/95 to 12/95; meeting two or more times per month.

4. ITAC GIS Task Force Report
   a. Report, to be presented at the 1/95 ITAC meeting, will document the Task Force's research and findings as related to Task Force Objectives.

ITAC GIS TASK FORCE MEETING MINUTES
August 30, 1995

The meeting was called to order at 10:10 a.m.

In attendance: Craig Bacino, Allan Cox, Sharon Cummings, Kristin Gerhart, Fred Gifford, Steve Hellenthal, Stu Kirkpatrick, Donna Leeper, Brian Long, Cathy Maynard, Lois Menzies, Don Peters, Randy Piearson, Mike Randall, Kerry Spickelmier and Hans Zuuring.

Lois Menzies welcomed and thanked everyone for their participation in this task force. The group introduced themselves.

ITAC's Enterprise-Wide Vision

Lois gave a short overview of the Information Technology Advisory Council (ITAC) and Information Technology Managers Group (ITMG), explaining origins, membership and purpose. Lois explained the IT strategic planning process and how it addresses information technology as an enterprise-wide concept. ITAC also created the GIS task force with this enterprise-wide spirit in mind. Lois sees this task force building on the work that has been done and making recommendations to ITAC. Steve Hellenthal mentioned that it would be good for the ITAC strategic planning group to keep local government in mind when they next meet.

Task Force Objectives

Allan Cox explained the creation of the ITAC GIS Task Force. He referred the group to the memorandum presented by Mick Robinson to ITAC in July 1995. While there are only nine "official" members, this process needs the participation of everyone in the GIS community in Montana. The task force hopes to hold meetings in towns other than Helena and use periodic video conferencing to facilitate participation across the GIS community.

Tasks include:
- group organization
- agenda/milestones
- operation of task force

Cathy Maynard mentioned that an open invitation has been made to Montana GIS Interagency Technical Working Group (TWG) members as they have considerable expertise to share.

Technical/Administration Support

Kerry Spickelmier explained ISD support, which includes:

- agenda preparation after the group decides on agenda items
- organize meeting locations, logistical support
- create and update ITAC GIS Task Force mailing list
- place meeting agendas on the state bulletin board system
- provide reimbursement at the standard state per diem rate for the local government representatives and the Federal Geographic Data Committee (FGDC) representative
- pay for periodic video conferences
- provide photocopying, customized designing and distribution of the draft and final reports

Allan Cox explained NRIS support, which includes:

- GIS staff expertise to research issues and provide technical support
- place the meeting agendas on the NRIS Internet web site

Montana GIS Overview

Fred Gifford started with an evaluation of the report presented to ITAC that addressed GIS activity within the state.

State Agencies

GIS activity is widespread in state agencies and implementations of GIS are varied. Approximately 20% of GIS potential is being used at the state level. Most state agencies are using ARC/INFO at the workstation and PC level.

Obstacles to the prevalent use of GIS in state agencies include a lack of: network connectivity, qualified staff, standards and guidelines, high-level management support, and data to support GIS applications.

Local Government

Fred reported that approximately eight local governments are now using GIS. A number of counties have started cadastral base maps, and Flathead County's is completed. The Montana Local Government GIS Coalition (MLGGC) has been established. Steve Hellenthal (of Yellowstone County) reported that this coalition has been formed to cooperate, communicate, share resources, adopt standards, implement strategies, etc. The Coalition was able to elevate their needs to ITAC level which resulted in the creation of this task force. Stu Kirkpatrick will be making a presentation at the MACO (Montana Association for Counties) convention on the current state of GIS at the local government

level. Stu believes local government is probably using less than 20% of the power of GIS. He also notes that state and local government data needs are different. Steve hopes the ITAC GIS Task Force will be able to cause GIS application at the local/city level to happen quicker, smoother and more cost effectively.

Obstacles to greater use of local government GIS include: access to affordable technology; cost of data creation; access to qualified people; access to network communications; and access to the local government GIS community nationwide.

Federal

Fred explained the purpose of the Federal Geographic Data Committee (FGDC). Allan Cox handed out information from FGDC and copies of the *Content Standards for Digital Geospatial Metadata Workbook*. Mike Randall reported that the Department of Transportation is working with FGDC in data sharing. TWG has adopted the federal Metadata standards.

Lunch break 12:17 - 1:27 p.m.

Election of Chair

Allan Cox motioned that Kerry Spickelmier be facilitator for the meetings instead of electing a chairperson. The motion passed. Kerry will facilitate meetings. The group will generate, and provide Kerry, agenda items for their future meetings.

Meeting Schedule and Process

The GIS Task Force will present its recommendations to ITAC on March 12, 1996. It was decided to meet twice monthly initially. Meetings are scheduled for Wednesday, September 13 & 27, 9:00 a.m. - 4:00 p.m. at the State Library Conference Room (Room 212, 1515 E. Sixth Ave., Helena).

Milestone dates will be developed at a future meeting. Four objectives are listed as a part of the creation of this task force; see the memo to ITAC from Mick Robinson.

General Discussion

Kerry requested that the group document the discussion and decisions made throughout the task force process. This will make it easier when producing the final report document for ITAC. As needed, a to-do list will be promptly distributed to task force members (by Kerry), following each meeting.

Allan Cox will check with Michael Domaratz, FGDC senior staff, to see if he is able to spend time with this group during the week of November 13-18.

Kerry Spickelmier will bring copies of Montana's strategic plan on information technology to the next meeting. A presentation on SummitNet will be scheduled in the future. Allan will get the members of this task force added to the FGDC mailing list.

Issues

The following issues were identified:

- data maintenance
- data archiving
- data transfer
- SummitNet's capabilities in relation to GIS
- cadastral data needs for local government at parcel base level
- natural resources data needs for state government
- continual update of GIS assessment
- database standardization
- review Montana Standards Plan

Agenda Items for Next Meeting

- GIS efforts within other states
- Develop a brief assessment survey to distribute to in-state GIS users
- Review existing standards impacting GIS
- Brainstorm GIS issues and major concerns
- Identify task force opportunities for outreach

The meeting adjourned at 3:07 p.m.